KAWAI

PERSONAL KEYBOARD

MK 10
MK 20

Owner's Manual

INTRODUCTION

Thank you for purchasing a member of Kawai's MK Series of electronic keyboards. These advanced instruments use the latest developments in electronics to offer you more features than you'll find in any other personal keyboard. The MK Series provides the unsurpassed flexibility and full realism of both PCM sound sources and Kawai's own Variable Memory (VM) sound sources. Complete touch sensitivity and many other features provide you with total artistic expression, whether you're new to playing keyboards or whether you're already well-versed in advanced electronic musical instrument techniques.

To help you get the most from your new instrument, we recommend that you practice with your keyboard as you read the explanations in this guide. You'll want to keep this manual handy for future reference.

FEATURES

* VM Sound Sources

Kawai's Variable Memory (VM) sound sources use the latest digital technology to create just the sounds that you are looking for — from the lush sounds of a full orchestra to the pure tones of a synthesizer.

* Touch Response Function

Kawai's Touch Response function allows you to control the MK's tone, volume, and percussion sounds with your touch on the keyboard.

* Flexible, Realistic Rhythm Accompaniment

PCM recording faithfully reproduces rhythm patterns, hand percussion, and fill-ins recorded digitally with professional musicians. The keyboard provides a complete selection of rhythm patterns you can use with a tremendous variety of songs.

* Programming Ease

The MK series' Program Registration feature allows you to store a combination of settings tone, rhythm, volume, and other keyboard features easily for instant recall later. The MK20 also includes a program sequencer which stores melody, accompaniment, and other parts in real time, as your play.

* MIDI Link to Other Instruments

The internationally-recognized MIDI standard allows you to connect your MK Series Keyboard to synthesizers, drum machines, and other electronic instruments so that you can control them from your Kawai keyboard.

CARE AND MAINTENANCE

PROTECT YOUR MK KEYBOARD FROM:

* Direct sunlight and exposure to the elements
* Temperature and humidity extremes
* Unstable or "noisy" AC power
* Dust and sand
* Vibration during transport

POWER SUPPLY

* Use a 10-volt power supply
* Make sure that all power switches are off before changing equipment connections

CLEANING

* Clean the instrument with a soft cloth, a mild detergent and lukewarm water
* Never use harsh or abrasive cleaners or organic solvents

REPAIRS

The MK keyboard should only be serviced by an authorized Kawai repair station. Always save your valuable internal data to a PROGRAM CARD before taking the MK20 in for service, as the data may be erased during repair.

HELPFUL HINT

Back-up

A special capacitor preserves memory contents (PROGRAM REGISTRATION/SEQUENCER/ACCOMPANIMENT) for a week after the power is turned off. If you wish to keep the data for longer periods, either turn on the power within a week after the power is turned off or copy it to a program card (MK20).

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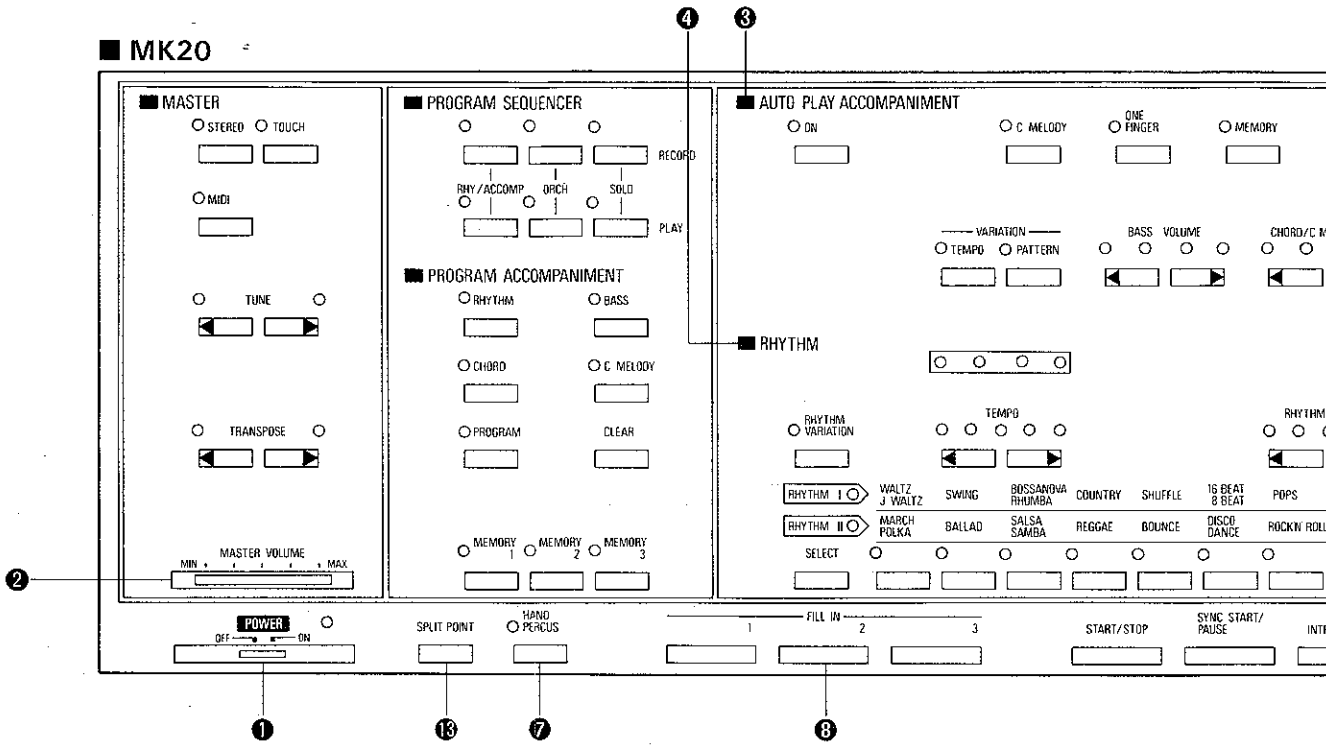

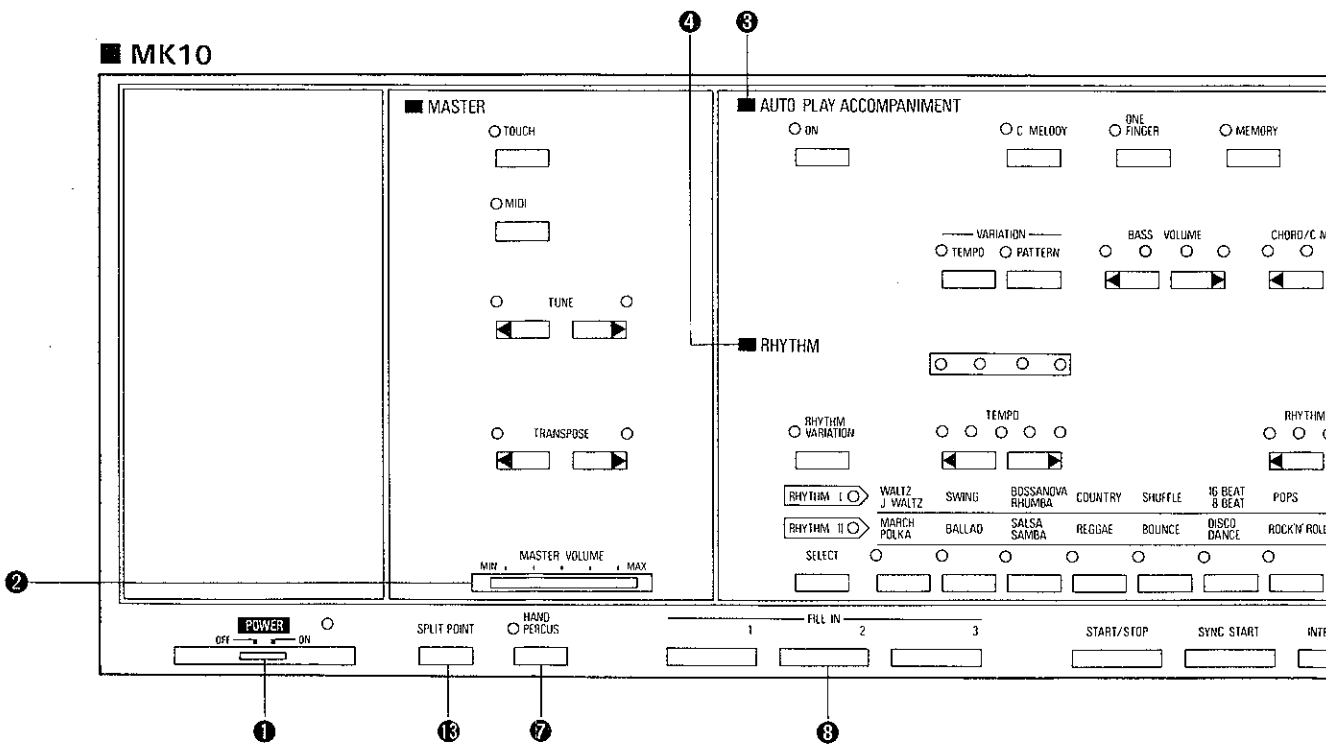

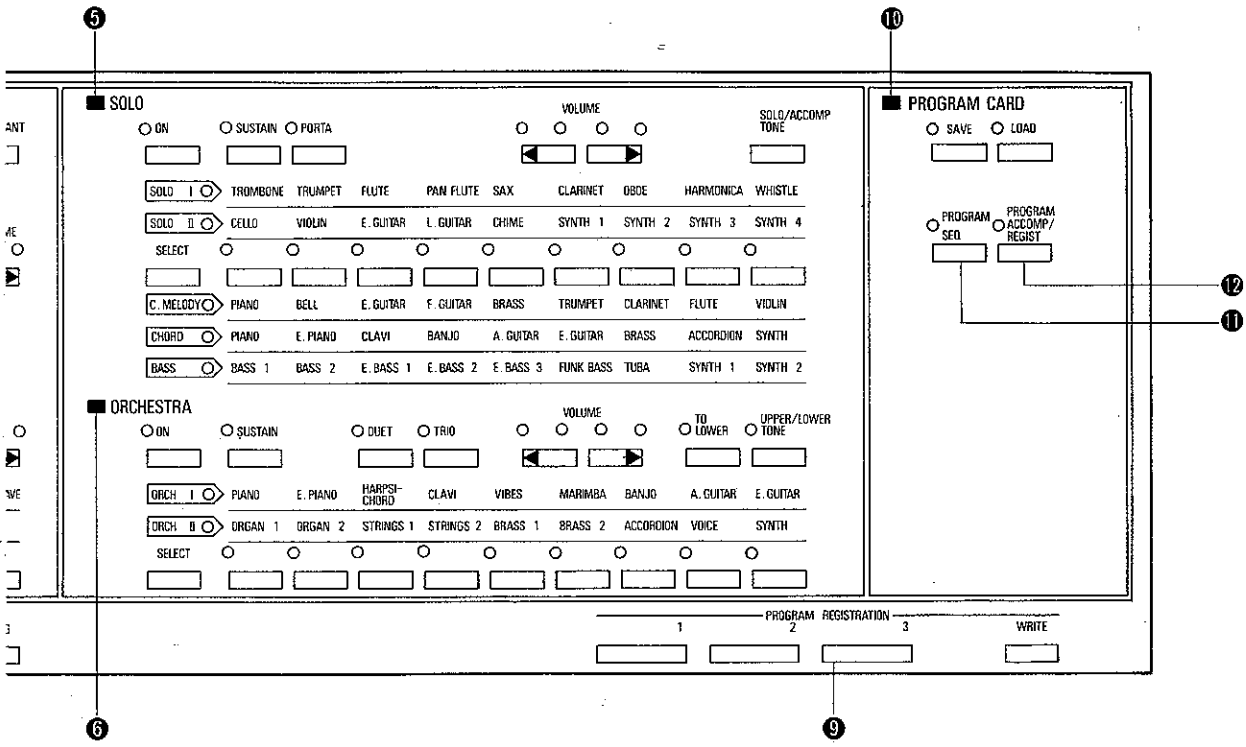
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PORTA
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SOLO/ACCOMP TONE
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SOLO II
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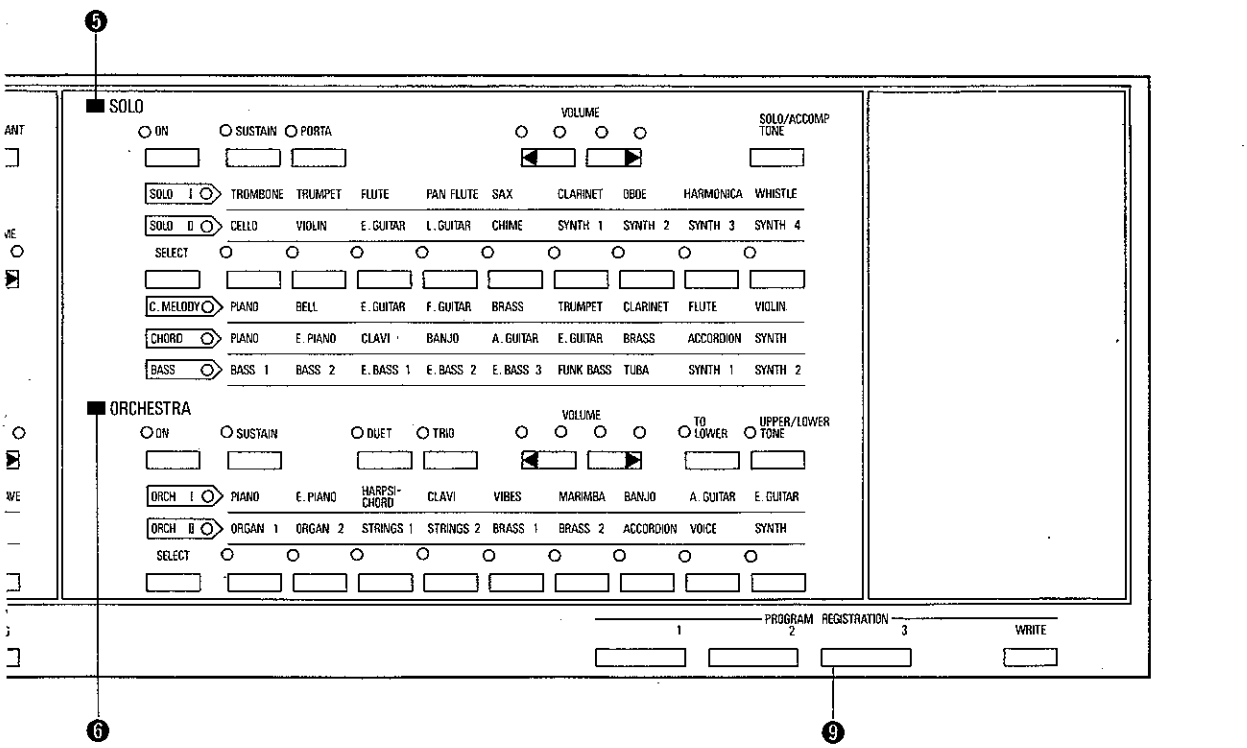
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SELECT
PROGRAM REGISTRATION
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WRITE
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1. PLAYING FOR THE FIRST TIME

1.1 SETTING UP

1.1.1 Line Power

Your MK Series keyboard includes an AC adapter with two cords connected to it. Plug its power cord into a wall socket and the other cord into the 9-12 V DC jack on the back of the keyboard.

1.1.2 Battery Power

Your MK Series keyboard is also capable of battery-powered operation. Remove the cover on the bottom of the keyboard and insert six size "A" cells. Be sure the batteries face in the correct direction as indicated in the battery compartment.

If lamp next to the POWER switch flashes when you turn on the keyboard, the batteries are running low. Promptly replace the entire battery set.

1.1.3 Music Stand

Insert the music stand in the two holes provided on the top of the keyboard.

1.2 IMPORTANT NOTES

1.2.1 Power

*Use only the adapter provided and only connect it to an outlet with the proper voltage.

*Do not handle the power cord with wet hands. An electrical shock may result.

*Be careful not to step on or trip over the power cord. The wires inside may break or short-circuit.

1.2.2 Location

*Avoid locations with excessive dust or humidity.

*Avoid heaters, direct sunlight, and other sources of extreme heat.

1.2.3 Cleaning

*Wipe the unit with a clean, dry cloth. Remove excess dirt with a tightly wrung, damp cloth.

*Never use alcohol, paint thinner, or other organic solvents.

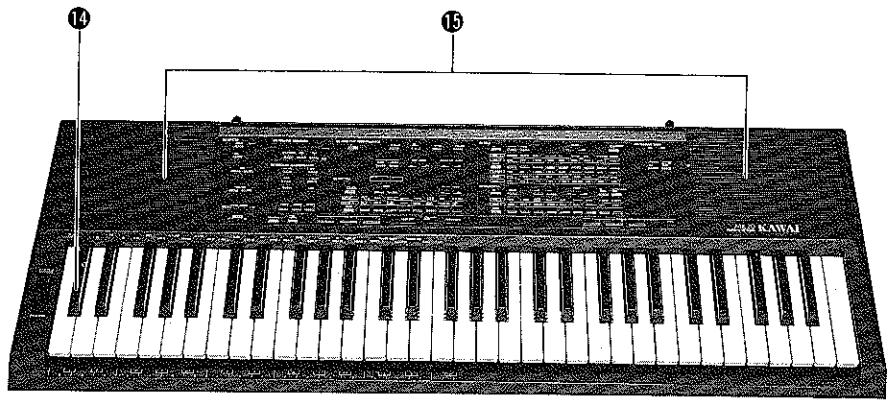
1.2.4 Repairs

*Never attempt to remove or modify internal components. This will void your warranty and it may cause damage to the instrument.

*If your keyboard appears to be malfunctioning, contact the store where you purchased the instrument, or your nearest authorized Kawai service facility.

1.2.5 Turning off

When you finish playing, turn off the power and make sure the Power light goes out. Leaving your keyboard on for extended periods may lead to electrical problems.



❶ **POWER switch**
Controls the keyboard's power.

❷ **MASTER VOLUME slider**
Controls the keyboard's output volume.

❸ **AUTO PLAY ACCOMPANIMENT controls**
Control the keyboard's automatic accompaniment functions.

❹ **RHYTHM section**
Controls the keyboard's automatic rhythm accompaniment.

❺ **SOLO controls**
Control the SOLO tone and the tone for the automatic accompaniment.

❻ **ORCHESTRA controls**
Control the ORCHESTRA tone.

❼ **HAND PERCUS switch**
Turns a section of the keyboard into a percussion section.

❽ **FILL-IN switches**
Provide temporary variations in the rhythm or automatic accompaniment.

❾ **PROGRAM REGISTRATION section**
Controls storage and retrieval of tone, rhythm, volume, and other settings.

❿ **PROGRAM CARD (MK20 only)**
Provides an external storage medium for holding program sequencer, program accompaniment, and program registration data.

⓫ **PROGRAM SEQUENCER section (MK20 only)**
Provides separate storage facilities for rhythm, automatic accompaniment, SOLO and ORCHESTRA data. These may be combined for automated playing.

⓬ **PROGRAM ACCOMPANIMENT section (MK20 only)**
Allows you to create your own automatic accompaniments for later recall.

⓭ **SPLIT POINT switch**
Allows you to split the keyboard into two sections. Each section controls a separate function.

⓮ **PITCH BEND wheel**
Bends the keyboard's pitch up or down.

⓯ **SPEAKERS**
Monitor keyboard output. The MK20 features two speakers for stereo monitoring.

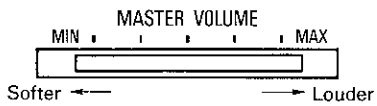
1.4 GETTING READY TO PLAY

1.4.1 Power

Shift the POWER switch to turn on the keyboard. The light next to the switch will turn on.

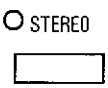
1.4.2 Master Volume

Press any key and adjust the keyboard's output volume with the MASTER VOLUME slider.



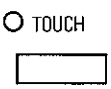
1.4.3 Stereo (MK20 only)

Press the STEREO key for stereo output from the MK20's two speakers. This provides a more realistic sound.



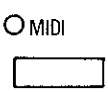
1.4.4 Touch

Press the TOUCH key to activate the keyboard's touch sensitivity. The light next to the TOUCH key will turn on. The TOUCH function allows you to control the volume and tone of the keyboard with the force and speed of your keystrikes. Pressing the TOUCH key again cancels this function.



1.4.5 MIDI

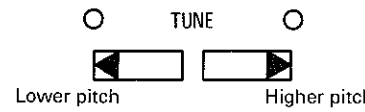
If you wish to use the keyboard's MIDI functions, hold this switch down and press the appropriate panel controls. (See p. 27 for procedures).



1.4.6 Tune

You may adjust the keyboard's pitch to match other instruments with the TUNE control.

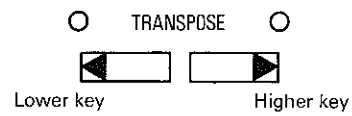
The LED next to one of the two TUNE lights whenever the pitch is lower or higher than the standard pitch (A=440 Hz). To return to the standard pitch, either turn off the power momentarily or simultaneously press both TUNE buttons.



1.4.7 Transpose

The TRANSPOSE buttons allow you to adjust the instrument's key up or down in semitone increments. The maximum transpose range is half an octave.

The LED next to one of the two TRANSPOSE lights whenever the key is different from the standard key of C. To return to the standard key, either turn off the power momentarily or simultaneously press both TRANSPOSE buttons.

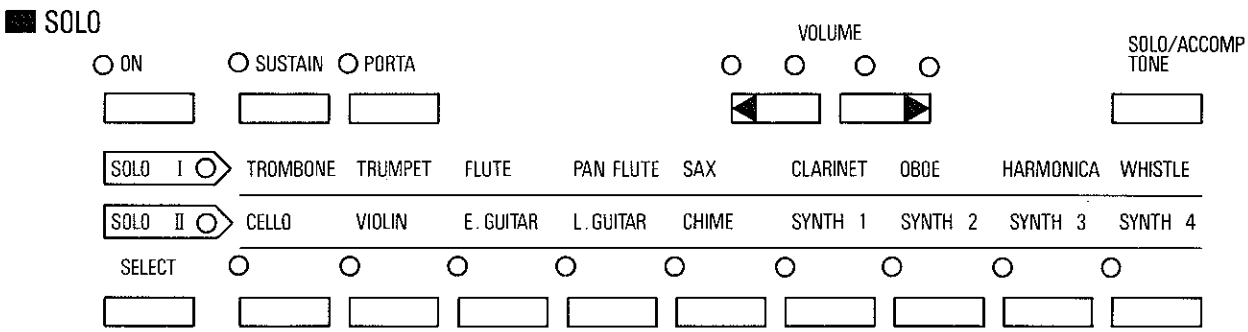


■ **BOXED NOTE:**

The TRANSPOSE function eliminates the need to manually transpose your music from one key to another to match another instrument or a vocalist.

2. TONES AND EFFECTS

2.1 SOLO TONES



2.1.1 Selecting a Tone

❶ Press the SOLO switch so that the LED next to it lights. If you wish, turn off the ORCHESTRA section so you can hear the SOLO tone more clearly.

❷ Select a tone using one of the tone selection buttons. Each tone selection button provides a choice of two tones, SOLO I and SOLO II. Switch between them with the SELECT switch.

Changing to a new tone automatically cancels the previous selection.

SOLO produces only one note a time. If you simultaneously play several notes, only the highest will sound.

2.1.2 Experimenting with Effects

Play a melody on the keyboard and use the procedure above to change tones. Then try pressing the appropriate switches to add these effects:

2.1.2.1 SUSTAIN

This effect provides a natural reverberation that continues after you release a key. The amount of reverberation depends on the tone. Pressing the SUSTAIN switch a second time cancels the effect.

2.1.2.2 PORTA (Portamento)

This effects smooths the transition in pitch as you move from one note to the next. The pitch glides from one note to note. Pressing the PORTA switch a second time cancels this effect.

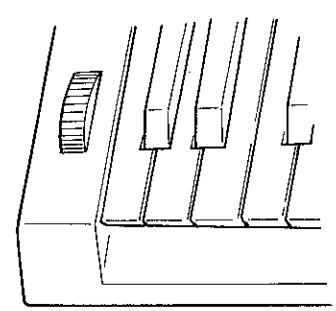
For the PORTAMENTO effect to work properly, you must press another key before releasing the previous key.

2.1.2.3 SOLO/ACCOMP TONE (Solo/Accompaniment Tone)

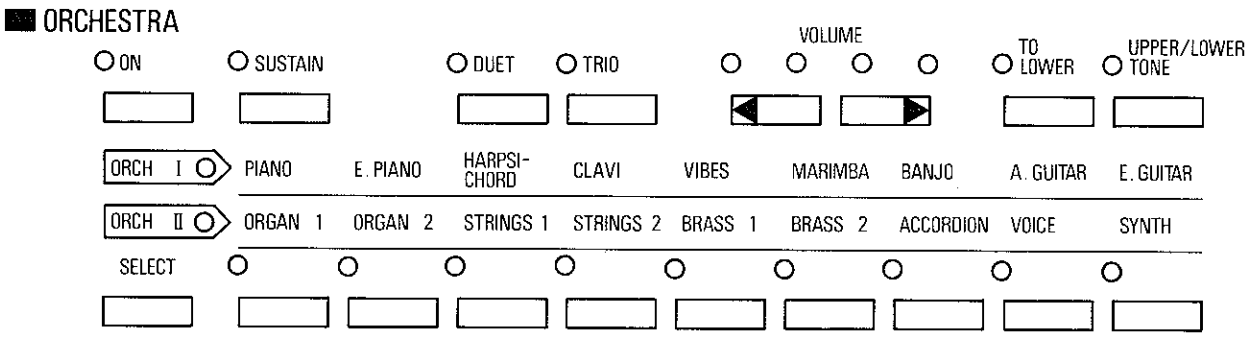
This switch allows you to select the tone for the counter-melody, chords, and bass parts used by the AUTO PLAY ACCOMPANIMENT. (See p. 16) Pressing the SOLO/ACCOMP TONE a second time allows you to select the SOLO tone again.

2.1.2.4 PITCH BEND

Rolling the PITCH BEND wheel at the left of the keyboard away from you raises the pitch of the solo tone. Rolling it toward you lowers the pitch. PITCH BEND is also available for ORCHESTRA tones when the SOLO switch is off.



2.2 ORCHESTRA TONES



2.2.1 Selecting a Tone

❶ Press the ORCHESTRA switch so that the LED next to it lights. If you wish, turn off the SOLO section so you can hear the ORCHESTRA tone more clearly.

❷ Select a tone using one of the tone selection buttons. Each tone selection button provides a choice of two tones, ORCHESTRA I and ORCHESTRA II. Switch between them with the SELECT switch.

Changing to a new tone automatically cancels the previous selection.

As long as AUTO PLAY ACCOMPANIMENT and TO LOWER functions are off, the ORCHESTRA voice provides up to eight tones simultaneously.

2.2.2 Experimenting with Effects

Play a melody on the keyboard and use the procedure above to change tone. Adjust the volume as necessary to maintain a proper balance between the ORCHESTRA and the other sound sources of your keyboard. Then try adding these effects:

2.2.2.1 SUSTAIN

This effect works just like SOLO's SUSTAIN. It provides a natural reverberation that continues after you release a key. The amount of reverberation depends on the tone. Pressing the SUSTAIN switch a second time cancels the effect.

2.2.2.2 DUET

This effect enhances the ORCHESTRA's sound. It automatically adds a harmonizing note based on the chords used by the AUTO PLAY ACCOMPANIMENT. Pressing the switch a second time cancels the effect.

The AUTO PLAY ACCOMPANIMENT must be played for DUET or TRIO to work.

2.2.2.3 TRIO

This effect further enhances ORCHESTRA's sound. It automatically adds two harmonizing notes based on the chords of the AUTO PLAY ACCOMPANIMENT. Pressing the switch a second time cancels the effect.

*Turning AUTO PLAY ACCOMPANIMENT off automatically disables DUET and TRIO.

*The tone of notes added by DUET and TRIO matches the tone specified by the ORCHESTRA tone selection switches.

*DUET and TRIO are not effective when TO LOWER is on.

*Pressing the DUET switch automatically cancels TRIO, and vice versa.

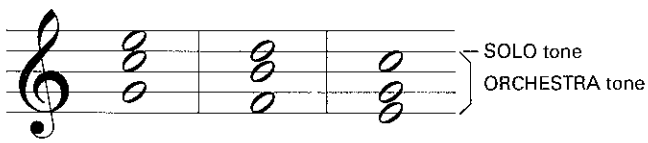
2.3 COMBINING SOLO AND ORCHESTRA TONES

❶ Press the SOLO and ORCHESTRA switches so that their LEDs light.

❷ Select SOLO and ORCHESTRA tones.

❸ Adjust the volume controls.

When you play a single note, the keyboard uses both SOLO and ORCHESTRA tones. However, when you play more than one, the keyboard uses the SOLO tone for the highest note and the ORCHESTRA tone for all the lower notes.



2.4 SPLITTING THE KEYBOARD BETWEEN SOLO AND ORCHESTRA

■ **Procedure**

❶ Press the SOLO switch so that its LED lights.

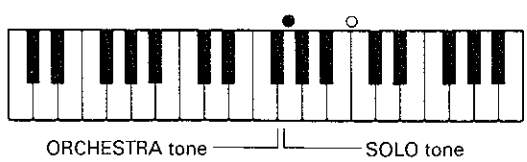
❷ Select the SOLO tone for the upper half of the keyboard.

❸ Press the ORCHESTRA switch so that its LED lights.

❹ Press the TO LOWER switch to split the keyboard into two halves. (The UPPER/LOWER TONE is automatically activated.)

❺ Select the ORCHESTRA tone for the lower half of the keyboard.

❻ Press the AUTO PLAY ACCOMPANIMENT switch so that its LED lights.



When you play notes to the left of the SPLIT POINT indicator (an LED just above the keys), the keyboard uses the ORCHESTRA tone. However, when you play notes to the right of the SPLIT POINT indicator, it uses the SOLO tone.

You may want to re-adjust the volume of the SOLO tone compared to the ORCHESTRA tone. Use the individual SOLO or ORCHESTRA volume control. Remember, the MASTER VOLUME slider adjusts the overall output.

2.5 SPLITTING THE KEYBOARD BETWEEN TWO ORCHESTRA TONES

■ **Procedure**

❶ Turn off the AUTO PLAY ACCOMPANIMENT switch.

❷ Press the ORCHESTRA switch so that its LED lights.

❸ Select the ORCHESTRA tone for the upper half of the keyboard.

❹ Press the TO LOWER switch to split the keyboard into two halves.

❺ Press the UPPER/LOWER TONE switch so that its LED lights.

❻ Select the ORCHESTRA tone for the lower half of the keyboard.

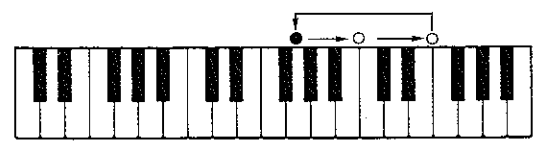
When you play notes to the left of the SPLIT POINT indicator, the keyboard uses the second ORCHESTRA tone. Notes to the right, however, use the first one.

To change the tones of either the upper half or the lower half of the keyboard, use the UPPER/LOWER TONE switch to toggle from one to the other. You can set the upper half's tone when the UPPER/LOWER TONE switch's LED is off. You can set the lower half's tone when the UPPER/LOWER TONE switch's LED is on.

The SOLO tone can be combined with the ORCHESTRA tone for the upper half.

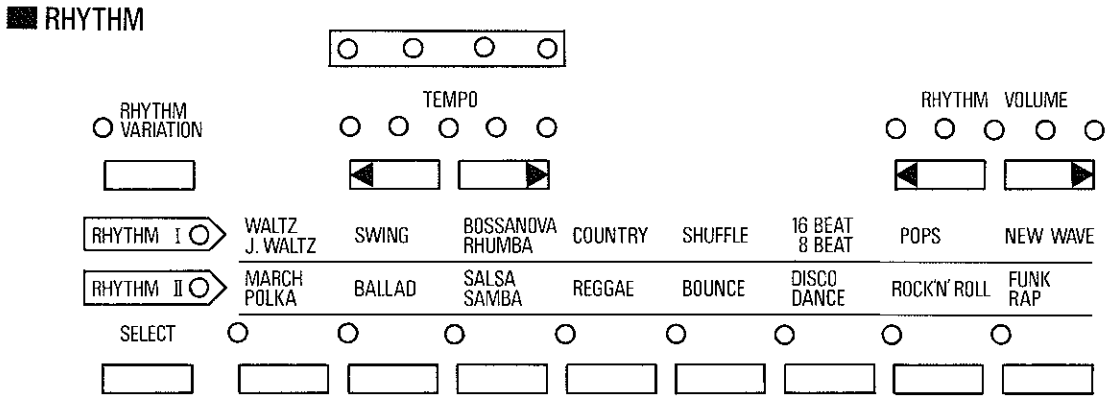
2.6 CHANGING THE KEYBOARD SPLIT POINT

Press the SPLIT POINT switch repeatedly until the split point is at any one of three possible locations. An LED just above the keyboard shows the current split point.



3. RHYTHM

3.1 SELECTING A RHYTHM

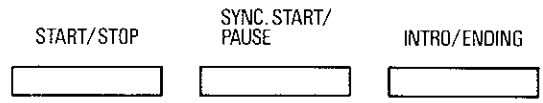


Select a rhythm using one of the rhythm selection buttons. Each rhythm selection button provides a choice of two rhythms, RHYTHM I and RHYTHM II. Switch between them with the SELECT switch.

Changing to a new rhythm automatically cancels the previous selection.

3.2 STARTING A RHYTHM

There are three ways to start the rhythm accompaniment:



***Press the START/STOP switch.**
Immediately after you press the START/STOP switch, the rhythm accompaniment starts at the first beat of the rhythm pattern.

***Press the SYNC START switch.**
When you strike the first note on the keyboard, the rhythm accompaniment starts at the first beat of the rhythm pattern.

***Press the INTRO/ENDING switch.**
The rhythm accompaniment starts after it plays a one-bar introduction that matches the rhythm pattern you've chosen.

The LED just above the RHYTHM ACCOMPANIMENT section's controls flashes. It shows you the current tempo before you start the rhythm pattern.

3.3 STOPPING A RHYTHM

There are two ways to stop the rhythm accompaniment:

*Press the START/STOP switch. The rhythm accompaniment stops immediately.
*Press the INTRO/ENDING switch. The rhythm accompaniment plays a two-bar ending and then stops.

3.4 GETTING RHYTHM VARIATIONS

When the LED next to the RHYTHM VARIATION switch is out, the rhythm selectors are assigned the upper of the two rhythm patterns listed in the rows labeled RHYTHM I and RHYTHM II. (See chart below.)

RHYTHM I	WALTZ	SWING I	BOSSANOVA	COUNTRY I	SHUFFLE I	16 BEAT	POPS I	NEW WAVE I
RHYTHM II	MARCH	BALLAD I	SALSA	REGGAE I	BOUNCE I	DISCO	ROCK'N'ROLL I	FUNK

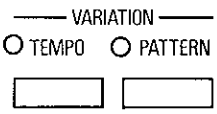
Pressing the RHYTHM VARIATION switch to light the LED changes the assignments to the lower patterns. (See chart.)

RHYTHM I	J. WALTZ	SWING II	RHUMBA	COUNTRY II	SHUFFLE II	8 BEAT	POPS II	NEW WAVE II
RHYTHM II	POLKA	BALLAD II	SAMBA	REGGAE II	BOUNCE II	DANCE	ROCK'N'ROLL II	RAP

Pressing the switch a second time cancels the change.

3.5 SPECIAL RHYTHM EFFECTS

3.5.1 Tempo Variations

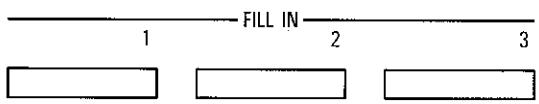


Pressing the TEMPO VARIATION switch changes the rhythm pattern and the AUTO PLAY ACCOMPANIMENT, if it is activated, to match the current tempo. A faster tempo will produce a different rhythm pattern from a slower tempo.

3.5.2 Pattern Variations

Pressing the PATTERN VARIATION switch changes the rhythm pattern. This function may be combined with the TEMPO VARIATION for even greater variety.

3.5.3 Fill Ins



The three FILL IN switches provide a rhythm variation that fills in the rest of a bar at the end of a phrase. This Fill In starts as soon as you press the switch. The length of the Fill In depends on when you press the switch:

*If you press the switch in the middle of a bar, the Fill In lasts until the end of the bar.

*If you hold the switch down past the end of the bar, the Fill In continues until the end of the next bar.

The Fill In pattern represents a special variation on the original rhythm pattern. Your keyboard provides three different Fill Ins:

FILL IN 1: The ryhthm pattern and automatic accompaniment change.

FILL IN 2: One of three variations will appear at random.

*If the AUTO PLAY ACCOMPANIMENT is activated, it will stop for the duration of the Fill In.

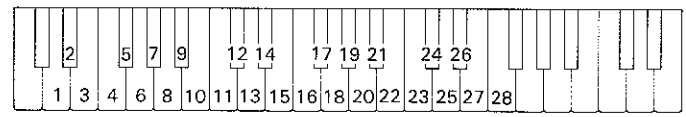
FILL IN 3: Inserts a break, then a variation of the rhythm pattern and automatic accompaniment.

Once you have mastered its timing, you can use the Fill In interval to change the tone, effects, and other registration settings for the next phrase of the song.

3.5.4 Hand Percussion

Your keyboard has 28 different percussion sounds available. When the HAND PERCUS switch is pushed, different percussion trigger keys in the lower half of the keyboard produce different percussion sounds.

The sounds are assigned to the following keys:



Key	Percussion instrument
1 D1	BASS DRUM
2 D#1	RIM SHOT
3 E1	SNARE DRUM
4 F1	ELECTRIC SNARE DRUM
5 F#1	CLAPS
6 G1	TOM HIGH
7 G#1	HIGH HAT CLOSED
8 A1	TOM MID
9 A#1	HIGH HAT OPEN
10 B1	TOM LOW
11 C2	ELECTRIC TOM HIGH
12 C#2	CRASH
13 D2	ELECTRIC TOM LOW
14 D#2	RIDE
15 E2	BONGO HIGH
16 F2	BONGO LOW
17 F#2	COWBELL
18 G2	CONGA HIGH
19 G#2	AGOGO HIGH
20 A3	CONGA LOW
21 A#3	AGOGO LOW
22 B3	TIMBALES HIGH
23 C4	TIMBALES LOW
24 C#4	TRIANGLE CLOSED
25 D4	TAMBOURINE
26 D#4	TRIANGLE OPEN
27 E4	CLAVES
28 F4	SHAKER

To disable Hand Percussion, press the HAND PERCUS switch once again so that its LED goes off.

When Hand Percussion is enabled, the keyboard Split Point is automatically set to the position farthest to the right. Also, AUTO PLAY ACCOMPANIMENT is not available and the keys to the right of the 28 percussion trigger keys act as regular keys.

You can adjust Hand Percussion volume with the RHYTHM VOLUME control.

Your keyboard allows you to simultaneously sound up to six percussion instruments. Pressing the TOUCH switch allows you to control the loudness of each percussion instrument with the force of your keystrokes.

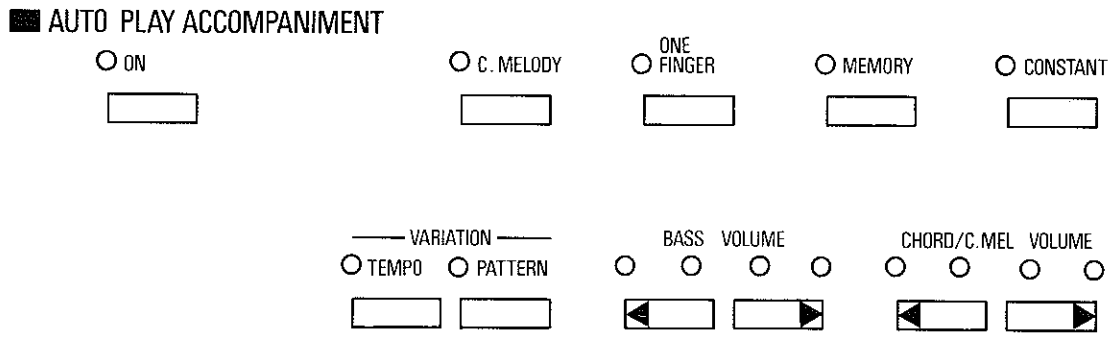
3.6 USING RHYTHM WITH AUTO PLAY ACCOMPANIMENT

If AUTO PLAY ACCOMPANIMENT is activated and you press the INTRO/ENDING switch, the accompaniment will remain silent during the introduction and begin in perfect synchronization with the rhythm pattern once the introduction is finished.

The INTRO/ENDING key also causes the AUTO PLAY ACCOMPANIMENT to create a two-bar ending.

4. AUTO PLAY ACCOMPANIMENT

4.1 NORMAL FINGERING



The AUTO PLAY ACCOMPANIMENT function automatically supplies a counter-melody, chord accompaniment, and bass parts based on the notes or chords you play on the lower half of the keyboard.

To create an AUTO PLAY ACCOMPANIMENT, follow these steps:

❶ Select a rhythm pattern.

❷ Adjust the rhythm volume and tempo.

❸ Press the AUTO PLAY ACCOMPANIMENT switch so that its LED lights. The lower half of the keyboard, to the left of the SPLIT POINT indicator, is now the accompaniment keyboard.

❹ Adjust the BASS VOLUME and CHORD/C. MEL VOLUME controls.

❺ Press the SYNC START switch.

❻ Play a chord on the accompaniment keyboard to start the automatic accompaniment.

The automatic accompaniment always starts with MEMORY on. So, even after you release the keys on the lower half of the keyboard, the automatic accompaniment continues to use the same chord until you play another.

4.2 ONE FINGER OPERATION

The AUTO PLAY ACCOMPANIMENT function automatically supplies a counter-melody, chord accompaniment and bass parts from a chord specification which you enter on the lower half of the keyboard. With one-finger operation, you do not have to play a chord. You enter a chord specification, instead.

To create a one-finger AUTO PLAY ACCOMPANIMENT, follow these steps:

❶ Select a rhythm pattern.

❷ Adjust the rhythm volume and tempo.

❸ Press the AUTO PLAY ACCOMPANIMENT switch so that its LED lights. The lower half of the keyboard, to the left of the SPLIT POINT indicator, is now the accompaniment keyboard.

❹ Press the ONE FINGER switch.

❺ Adjust the BASS VOLUME and CHORD/C. MEL VOLUME controls.

❻ Press the SYNC START switch or INTRO/ENDING switch.

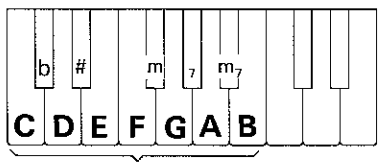
❼ Enter a chord specification on the accompaniment keyboard to start the automatic accompaniment.

The automatic accompaniment always starts with memory on. So, even after you release the keys on the lower half of the keyboard, the automatic accompaniment continues to use the same chord until you play another. If you turn memory off by pressing the MEMORY key, the accompaniment stops as soon as your hands leave the keyboard.

The automatic accompaniment always starts with the counter-melody on, but you may press the C. MELODY switch to turn it off.

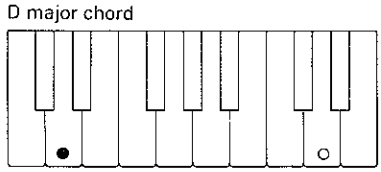
4.2.1 Chord Specifications

Enter the chord specification with the following key combinations:

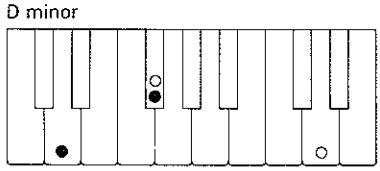


Examples

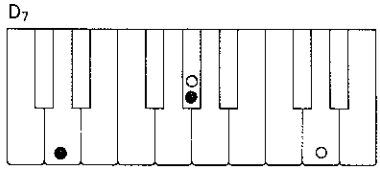
D major chord



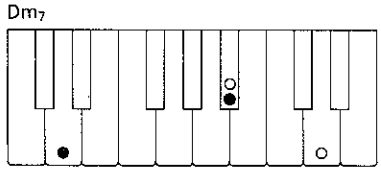
D minor



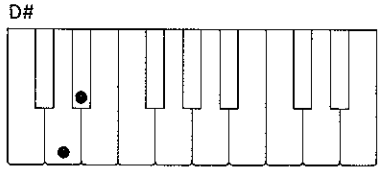
D_7



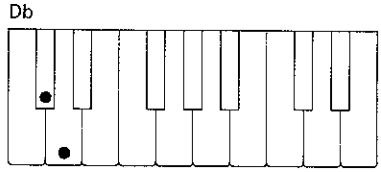
Dm_7



D#



Db



The black circles indicate the standard fingering; the white ones, an alternate fingering.

4.3 ADVANCED ACCOMPANIMENT FEATURES

4.3.1 CONSTANT

This control provides a constant accompaniment instead of a varying pattern. However, this function is not available for PIANO, E. PIANO, or other sharply attenuated sound sources. You may combine this feature with the MEMORY function.

4.3.2 Variations

Although the automatic accompaniment patterns already contain variations appropriate to the particular rhythm, you may add even more variation with the following controls:

4.3.2.1 TEMPO VARIATION

When the TEMPO VARIATION switch is pressed, the keyboard changes the rhythm and automatic accompaniment to match the tempo. There are two tempo variations. One for tempos above ♩= 140 and one for tempos below ♩= 140.

4.3.2.2 PATTERN VARIATION

When the PATTERN VARIATION switch is pressed, the keyboard varies the rhythm patterns. This variation may be combined with TEMPO VARIATION above.

4.3.2.3 CHORD VARIATION

The keyboard automatically adjusts the automatic accompaniment to match the type of chord given — for example, major, minor, seventh, etc.

4.3.3 Special Variations

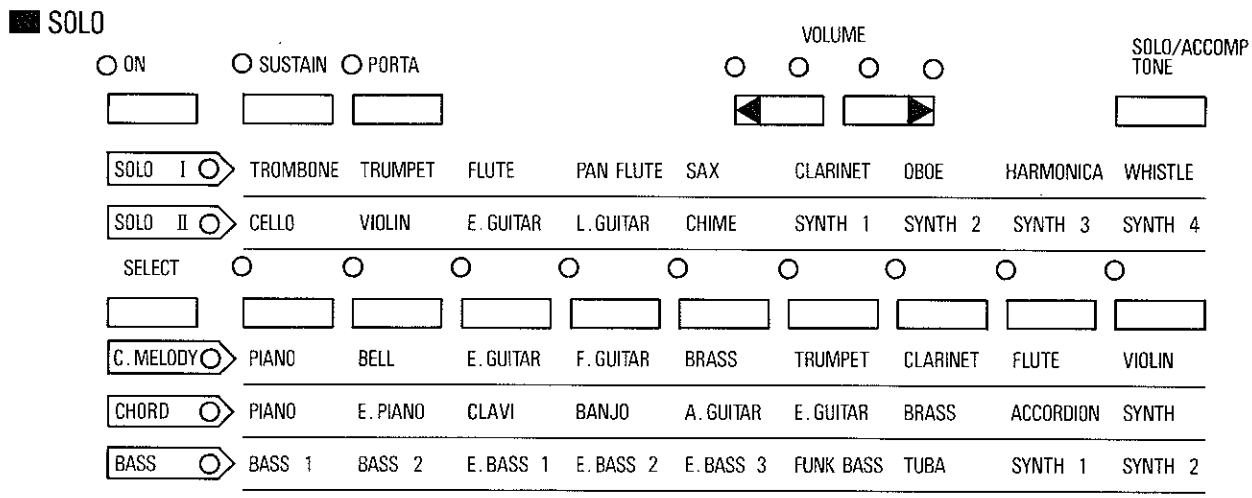
4.3.3.1 FILL IN switches

Pressing these switches provides variations of rhythm breaks or fill-ins for use during the performance.

4.3.3.2 INTRO/ENDING switch

Pressing this switch at the end of a piece changes from the rhythm and automatic accompaniment patterns provided by the MK series keyboard to a two-bar conclusion that finishes the piece.

4.3.4 Changing Tones


SOLO
ON
SUSTAIN
PORTA
VOLUME
SOLO/ACCOMP TONE
SOLO I
TROMBONE TRUMPET FLUTE PAN FLUTE SAX CLARINET OBOE HARMONICA WHISTLE
SOLO II
CELLO VIOLIN E.GUITAR L.GUITAR CHIME SYNTH 1 SYNTH 2 SYNTH 3 SYNTH 4
SELECT
C.MELODY
PIANO BELL E.GUITAR F.GUITAR BRASS TRUMPET CLARINET FLUTE VIOLIN
CHORD
PIANO E.PIANO CLAVI BANJO A.GUITAR E.GUITAR BRASS ACCORDION SYNTH
BASS
BASS 1 BASS 2 E.BASS 1 E.BASS 2 E.BASS 3 FUNK BASS TUBA SYNTH 1 SYNTH 2

The SOLO/ACCOMP TONE switch allows you to change the tones for all three parts of the automatic accompaniment: counter-melody, chord, and bass.

Example: Changing the chord tone to electric piano

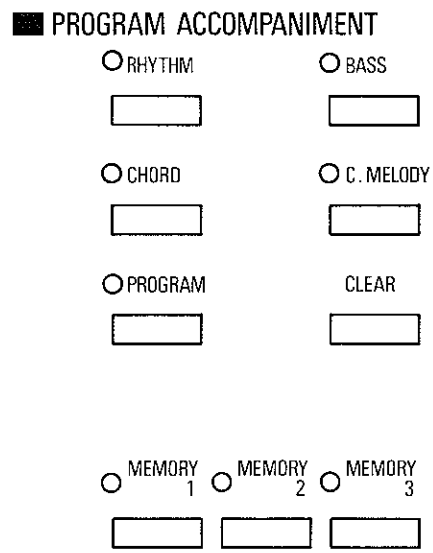
❶ Press the SOLO/ACCOMP TONE switch.

❷ Use the SELECT switch to specify the part to be changed, Counter-melody, (C. MELODY), Chord, or Bass — in this case, Chord.

❸ Press the tone selection switch corresponding to the tone you need in the row labelled, CHORD.

Follow a similar procedure to set the two other parts: counter-melody and bass.

5. PROGRAM ACCOMPANIMENT



The MK20's PROGRAM ACCOMPANIMENT feature allows you to program and store your own rhythm, bass, chord, and counter-melody parts for later use as automatic accompaniment.

The next section describes the basic procedure. The section after describes the procedure in detail.

5.1 BASIC PROCEDURE

The automatic accompaniment function uses a repeating two-bar pattern. Any pattern that you program must be exactly that length.

You program all parts in the key of C. Later, when recall the programmed accompaniment, you can use the lower part of the keyboard to specify the same pattern in any key.

If you want 3/4 waltz time, you must start by choosing and altering a pattern in 3/4 time. If you want 4/4 time, you must start by choosing and altering a pattern in 4/4 time. You cannot change the basic beat pattern once you've started to program.

Programming at a lower tempo improves your accuracy. You may adjust the tempo any time before you start recording. Later, when you recall the pre-programmed pattern, you may use a faster tempo, if you wish.

While you record one pattern, you may wish to lower the volume of other patterns if they disturb you.

If you make a mistake at any point, you may press the CLEAR switch and start programming that pattern again.

Here are the steps you should follow:

5.1.1 Preparing for Input

❶ Select the rhythm closest to the rhythm you desire.

❷ Press the PROGRAM switch. The AUTO PLAY ACCOMPANIMENT will start.

5.1.2 Input

❶ Record the following four patterns one after another in any order. When they are all recorded, you'll store them in one of the three memory locations.

5.1.2.1 Rhythm Pattern

❶ Press the CLEAR switch to erase the current rhythm pattern.

❷ Record the rhythm pattern with the hand percussion keyboard.

5.1.2.2 Chord Pattern

❶ Press the PROGRAM ACCOMPANIMENT CHORD switch.

❷ Press the ONE FINGER switch if you wish to use the one finger chord function.

❸ Select the tone for the chords. You can change tone during playback with the SOLO/ACCOMP TONE switch and the tone selection switches just as you would change tones for the automatic accompaniment.

❹ Press the CLEAR switch to erase the current pattern.

❺ Play the chord pattern in the key of C.

5.1.2.3 Bass Pattern

❶ Press the PROGRAM ACCOMPANIMENT BASS switch.

❷ Select the tone for the bass part. You can change tone during playback with the SOLO/ACCOMP TONE switch and the tone selection switches just as you would change tones for the automatic accompaniment.

❸ Press the CLEAR switch to erase the current pattern.

❹ Play the bass pattern in the key of C.

5.1.2.4 Counter-melody Pattern

❶ Press the PROGRAM ACCOMPANIMENT C. MELODY switch.

❷ Select the tone for the counter-melody.

❸ Press the CLEAR switch to erase the current pattern.

❹ Play the counter-melody in the key of C.

5.1.3 Storage

❶ Press one of the three MEMORY switches so that the LED next to the PROGRAM switch goes out and the automatic accompaniment stops.

5.1.4 Recall

❶ Press the MEMORY switch for the area holding the programmed accompaniment.
❷ Press the AUTO PLAY ACCOMPANIMENT switch.
❸ Start the automatic accompaniment in one of the ordinary ways: SYNC START switch, START/STOP switch, or INTRO/ENDING switch.

Holding down the first two black keys (C#1 and D#1) as you turn the power on erases the all data stored in the PROGRAM ACCOMPANIMENT, PROGRAM SEQUENCER, and PROGRAM REGISTRATION sections.

5.2 PROGRAMMING PROCEDURE IN DETAIL

A programmed accompaniment consists of four parts: rhythm, bass, chords and counter-melody. You may program just one part or a combination of parts. If you need to program more than one part, you may program them in any order.

5.2.1 Preparing to Program

❶ Select the rhythm closest to your desired rhythm.
❷ You may use the variation switches, too.
❸ Adjust the rhythm volume and tempo. (You can record more accurately if you do so at a slower tempo, then speed up the playback later).
❹ Press the PROGRAM switch.

At this point, the keyboard will start repeating the selected two-bar rhythm pattern and the automatic accompaniment in the key of C to indicate that it is waiting for input. In the next four steps, you can modify any part in this four-part accompaniment.

5.2.2 Programming the Rhythm Pattern

❶ Make sure that the keyboard is ready for program input. (See Preparing to Program, above)
❷ Press the PROGRAM ACCOMPANIMENT RHYTHM switch so that its LED lights. Pressing this switch activates the HAND PERCUSSION function automatically. This cannot be canceled by the HAND PERCUS switch.
❸ Press the CLEAR switch to erase the current pattern and activate a 4-beat metronome.
❹ Record the rhythm pattern with the hand percussion keyboard. The rhythm pattern must be two bars long. If yours is only one bar long, you must repeat it for the second bar.
❺ The shortest possible note is the sixteenth note or, in the case of triplets, the triplet equivalent of the quarter note.

Although it may be possible to record the entire pattern with a single pass, a multipass approach is preferable because it gives more accurate results.

5.2.2.1 Example:

❶ Using the metronome as a guide, record the bass drum part. (If no metronome is desired, press C#1.)
❷ Using the metronome and bass drum part as a guide, add the snare drum part.
❸ Using the metronome, bass drum, and snare drum as a guide, add the high hat (closed) part.
❹ Repeat for any additional instruments you'd like to add (Remember, only 6 instruments can sound simultaneously).
❺ If you make a mistake, press the CLEAR button and start over.

You may eliminate a particular sound from the pattern by holding down the C1 key labelled " ERASE " and pressing the key that corresponds to that percussion sound.

Once you've created the desired rhythm pattern, switch to recording the bass, chord, or counter-melody parts or proceed to the storage step.

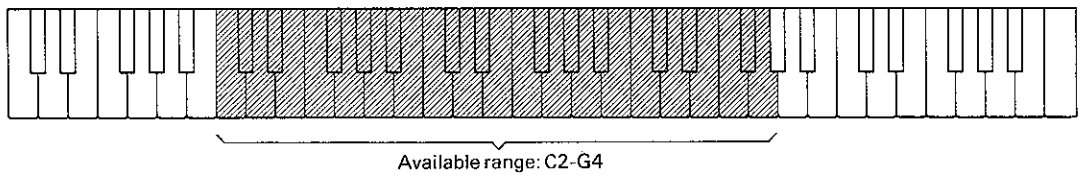
5.2.3 Programming the Chord Pattern

❶ Make sure that the keyboard is waiting for program input.
❷ Press the PROGRAM ACCOMPANIMENT CHORD switch so its LED lights.
❸ Select the tone for chords.
❹ Press the ONE FINGER switch if you wish to use the one finger chord function.
❺ Press the CLEAR switch to erase the current pattern.
❻ Play the backing pattern. How you play the backing pattern depends on whether you're using one finger chords or not.

If you're using normal chord fingering, you must play the chords you'd like to record. If you're using the one finger function, you only need to record the timing of the chords with the C2 key. You cannot change methods after you start recording.

5.2.3.1 Without ONE FINGER Chords.

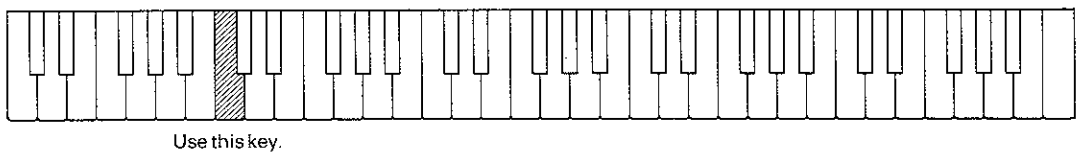
Play the chords you need with the timing you'd like on the keyboard. Restrict your playing to the range of keys between C2 and G4.



The keyboard will accept up to three notes at a time and ignore all notes outside the specified range.

5.2.3.2 With ONE-FINGER Chords

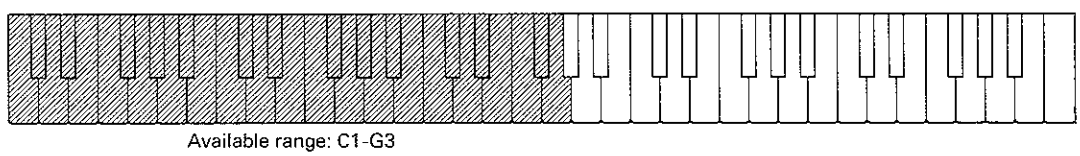
Use the C2 key to play the desired chord timing. (The keyboard will ignore all other keys.)



Once you have created the chord stroke pattern you desire, switch to recording another part or proceed to the storage step.

5.2.4 Programming the Bass Pattern

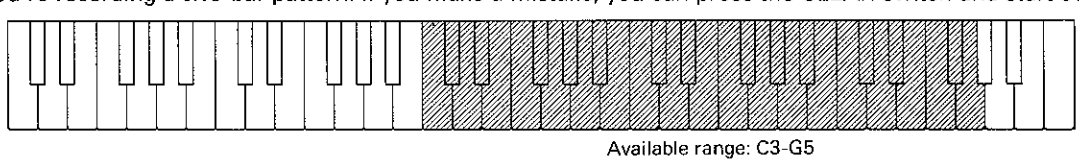
❶ Make sure that the keyboard is waiting for program input.
❷ Press the PROGRAM ACCOMPANIMENT BASS switch so that its LED lights.
❸ Select the tone for the bass part.
❹ Press the CLEAR switch to erase the current pattern.
❺ Play the bass pattern in the key of C. (The shortest possible note is the sixteenth note).



You can only record notes within the range of C1-G3. The keyboard will ignore all others. Once you have created the desired bass pattern, switch to recording another part or proceed to the storage step.

5.2.5 Programming the Counter-melody Pattern

❶ Make sure that the keyboard is waiting for program input.
❷ Press the PROGRAM ACCOMPANIMENT C. MELODY switch so that its LED lights.
❸ Select the tone for the counter-melody part.
❹ Press the CLEAR switch to erase the current pattern.
❺ Play the counter-melody pattern in the key of C.
Remember, you're recording a two-bar pattern. If you make a mistake, you can press the CLEAR switch and start over.



You can only record notes within the range of C3-G5. The keyboard will ignore all others. Once you have created the desired counter-melody pattern, switch to recording another part or proceed to the storage step.

5.3 STORAGE AND RECALL

Once you finish the desired accompaniment, you are ready to save it for later recall.

5.3.1 Storage Procedure

❶ Press one of the three MEMORY switches to specify a memory area to hold the accompaniment so that the LED next to the PROGRAM switch goes out and the automatic accompaniment stops.

5.3.2 Recall Procedure

❶ Press the MEMORY switch (1, 2, or 3) for the area holding the programmed accompaniment.

❷ Press the AUTO PLAY ACCOMPANIMENT switch so that its LED lights.

❸ Start the automatic accompaniment in one of the usual ways: SYNC START switch, START/STOP switch, or INTRO/ENDING switch.

You may also recall a programmed accompaniment, modify it, and store the revised version in another memory area.

5.3.3 Revision Procedure

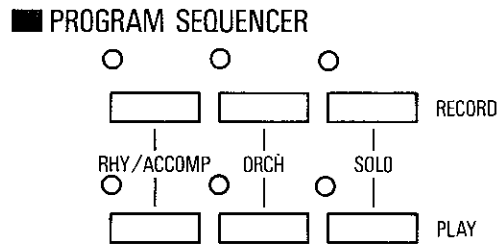
❶ Press the MEMORY switch (1, 2, or 3) for the area holding the programmed accompaniment.

❷ Press the PROGRAM switch.

❸ Modify the appropriate parts.

❹ Press a different MEMORY switch to store the results.

6. PROGRAM SEQUENCER (MK20 only)



The MK20's PROGRAM SEQUENCER function allows you to record rhythm/accompaniment, orchestra, and solo parts on separate channels for simultaneous playback later.

The keyboard retains these recordings for approximately one week after the power is removed. If you wish to keep your recordings for longer periods, copy them to a RAM card.

6.1 USING THE SEQUENCER

6.1.1 Rhythm and Chord Accompaniment

The RHY/ACCOMP channel has a storage capacity of approximately 80 bars. It does not record the TEMPO or the SPLIT POINT.

■ Procedure

❶ Set up the specific RHYTHM and AUTO PLAY ACCOMPANIMENT you'd like to use.
❷ Press the RHY/ACCOMP RECORD switch so that its LED lights.
This automatically activates the AUTO PLAY ACCOMPANIMENT and SYNC START functions.
❸ Play the chord accompaniment in time with the rhythm.
❹ Press the RHY/ACCOMP RECORD switch a second time to turn off the LED and store the sequence.

6.1.2 Solo

The SOLO channel has a storage capacity of approximately 400 notes. It does not record the SUSTAIN effect with the foot pedal or the TRANSPOSE, TUNE, or PITCH BEND functions.

■ Procedure

❶ Set up the specific SOLO tone you'd like to use.
❷ Press the SOLO RECORD switch so that its LED lights. This automatically activates the AUTO PLAY ACCOMPANIMENT and SYNC START functions.
❸ Press the RHY/ACCOMP PLAY switch so that its LED lights.
❹ Play the solo in time with the rhythm and chord accompaniment.
❺ Press the SOLO RECORD switch a second time to turn off its LED and store the sequence.

6.1.3 Orchestra

The ORCH channel has a storage capacity of approximately 750 notes. It does not record the SUSTAIN effect with the foot pedal or the TO LOWER, TRANSPOSE, or TUNE functions.

■ Procedure

❶ Set up the specific orchestra tone you'd like to use.
❷ Press the ORCH RECORD switch so that its LED lights. This automatically activates the AUTO PLAY ACCOMPANIMENT and SYNC START functions.
❸ Press the SOLO and RHY/ACCOMP PLAY switch so that their LEDs light.
❹ Play the orchestra accompaniment in time with the solo, rhythm, and chord accompaniment.
❺ Press the ORCH RECORD switch a second time to turn off its LED and store the sequence.

6.1.4 Playback

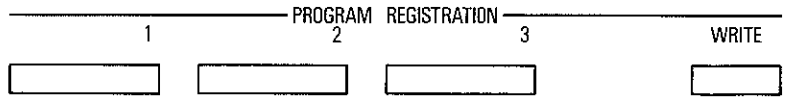
❶ Press the SOLO, ORCH, and RHY/ACCOMP PLAY switches so that their LEDs are lit.
❷ Touch any key or press the START/STOP switch to start the playback.

Holding down the two keys, C#1 and D#1 as turn on the power erases the data stored in the PROGRAM ACCOMPANIMENT, PROGRAM SEQUENCER, and PROGRAM REGISTRATION sections.

6.1.5 Modifying a Sequence

❶ Press the PLAY switch for the part that you wish to modify.
❷ Press any key. Since the SYNC START function is automatically activated, you can start the rhythm by touching a key. Alternately, you can start the rhythm with the START/STOP switch.
❸ Press the SYNC START/PAUSE switch just before the first bar that you wish to change.
❹ Press the RECORD switch for that part. At this point, you may also change the rhythm pattern, volume, and other settings.
❺ Record normally.

7. PROGRAM REGISTRATION



The three PROGRAM REGISTRATION buttons allow you to save three different configurations of most of the settings of your MK series keyboard at once for instant recall at any time later — even during a performance.

The setting that you can save include its tone, effects, rhythm, and the individual sections' volume settings.

7.1 TO SET UP A REGISTRATION

❶ Set all of the keyboard's tone, effects, rhythm and accompaniment functions.

❷ When your keyboard is in the exact configuration you'd like to recall, hold down the WRITE button and press one of the numbered PROGRAM REGISTRATION storage area buttons.

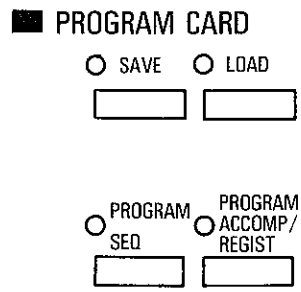
You cannot store the following settings: PROGRAM SEQUENCER, PROGRAM ACCOMPANIMENT, PROGRAM CARD, MASTER VOLUME, TUNE, HAND PERCUSSION, TEMPO, and MIDI.

Storing information in a storage area automatically erases the previous contents of that area.

The keyboard retains registration information for approximately one week when the power cord is removed. If you wish to keep this information for longer periods, copy it to a RAM card (MK20).

Holding down the first two black keys (C#1 and D#1) as you turn the power on erases data stored in the PROGRAM ACCOMPANIMENT (MK20 only), PROGRAM SEQUENCER (MK20 only), and PROGRAM REGISTRATION sections.

8. PROGRAM CARD (MK20 only)



The PROGRAM CARD is used for long-term storage of the data in the keyboard's PROGRAM SEQUENCER, PROGRAM ACCOMPANIMENT, and PROGRAM REGISTRATION sections.

8.1 SAVE

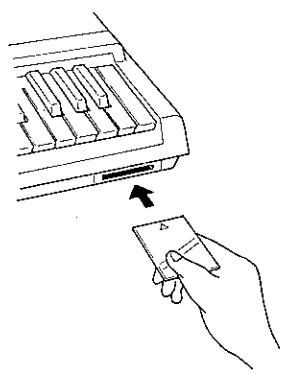
The SAVE function allows you to copy the PROGRAM SEQUENCER, PROGRAM ACCOMPANIMENT, and PROGRAM REGISTRATION data from the keyboard to the RAM card.

Saving new PROGRAM SEQUENCER or PROGRAM ACCOMPANIMENT/REGISTRATION information on a card erases the corresponding data currently on the card. Always check the card before inserting it.

You can save the PROGRAM SEQUENCER and PROGRAM ACCOMPANIMENT/REGISTRATION information either separately or together.

8.1.1 To save your data onto a RAM CARD

❶ Carefully insert your RAM Card into the slot provided for it in the lower right corner of the keyboard.



❷ While you hold down the SAVE button, press the PROGRAM SEQ, ACCOMP/REGIST switch, or both.

If you press the PROGRAM SEQ switch or PROGRAM ACCOMP/REGIST switches and their LEDs flash, either there is no RAM Card in the slot or it is not inserted properly. Reinsert the card and try again.

If the LEDs next to the PROGRAM SEQ and PROGRAM ACCOMP/REGIST switches start to flash, the RAM Card already contains data for an instrument other than the MK20. The MK20 will automatically cancel the SAVE operation, unless you press the SAVE switch a second time while the LEDs are still flashing.

The MK20 requires a RAM card with a storage capacity of at least 16 kilobytes. If the card has insufficient capacity, the LEDs next to the PROGRAM SEQ. and PROGRAM ACCOMP/REGIST. switches will flash for a new seconds, and the MK20 will automatically cancel the SAVE operation.

8.2 LOAD

The LOAD function allows you to copy the PROGRAM SEQUENCER, PROGRAM ACCOMPANIMENT, and PROGRAM REGISTRATION data from a RAM Card to the keyboard. Since you are only copying the data of the Card, it remains present on the Card for use later, unless you store new data on it.

You can load the PROGRAM SEQUENCER and PROGRAM ACCOMPANIMENT/REGISTRATION information either separately or together.

8.2.1 To load data from a RAM CARD

❶ Carefully insert the RAM Card into the slot provided for it in the lower right corner of the keyboard.

❷ While you hold down the LOAD button, press the PROGRAM SEQ switch, the PROGRAM ACCOMP/ REGIST switch, or both.

If pressing the PROGRAM SEQ switch or the PROGRAM ACCOMP/REGIST switch flashes the LED next to it, either there is no RAM Card in the slot or the card is improperly inserted. Reinsert the card and try again.

If the card contains data for an instrument other than the MK20 or the card is blank, the LEDs next to the PROGRAM SEQ and PROGRAM ACCOMP/REGIST switches will flash for a few seconds, and the MK20 will automatically cancel the LOAD operation.

8.3 DIRECT ACCESS

You can also use the data on a RAM Card without first loading it into the keyboard's main storage area. In this manner, you may avoid erasing your current keyboard settings. If you access the data directly from the RAM Card, you may switch freely between the two sets of data — one in the keyboard's internal storage area, and one on the RAM Card.

8.3.1 To directly access the RAM CARD data

❶ Carefully insert the card into its slot.

❷ Press the PROGRAM SEQ switch, the PROGRAM ACCOMP/ REGIST switch, or both. Do not press LOAD first.

If the LEDs next to the PROGRAM SEQUENCER PLAY switches, the numbered MEMORY switches for the PROGRAM ACCOMPANIMENT or THE PROGRAM REGISTRATION switches are lit, you may press them to change the keyboard to the RAM Card settings instead of its internal storage area settings.

If you modify these settings, the modified data will be saved on the RAM Card automatically, and not in the internal storage area.

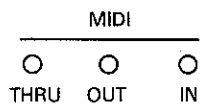
9. MIDI

9.1 INTRODUCTION

MIDI, the Musical Instrument Digital Interface, is an internationally recognized standard for connecting synthesizers, drum machines, electronic organs, and other electronic musical instruments so that they may freely exchange performance data. The nature of this data depends on the particular instruments involved. One of MIDI's most popular benefits is that it allows a musician to control a number of instruments from a single keyboard.

9.2 MIDI CONNECTIONS

Connecting two MIDI instruments is as easy as plugging the ends of a MIDI cable (available separately) into the instrument's MIDI jacks. The MIDI standard provides three such jacks:



IN : Accepts MIDI data

OUT : Transmits MIDI data from the instrument

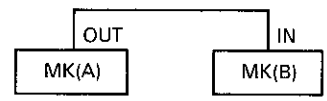
THRU : Passes MIDI data received from an instrument's MIDI IN directly to its MIDI OUT.

9.3 MIDI CHANNELS

The MIDI standard provides 16 separate channels for data transmission. A MIDI slave receives MIDI information from another MIDI instrument. A MIDI master transmits MIDI information to a slave. A slave acts only on data received on the channel to which it is set. Putting each slave on a different channel allows the musician to control them individually from the same master keyboard.

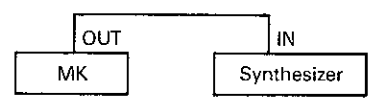
9.3.1 Examples

9.3.1.1 Connecting two MK10/MK20 keyboard



Connect the MIDI OUT jack on keyboard A to the MIDI IN jack on keyboard B. This allows you to instantly send your keystroke information from A to B. You can even change B's SOLO or ORCHESTRA tone from A.

9.3.1.2 Using a synthesizer as a slave



Connect the MIDI OUT jack of the MK10 or MK20 to the MIDI IN jack of a synthesizer. This allows you to play one instrument and have them both sound simultaneously. You can also change the synthesizer's programmed tone by changing the MK10 or MK20's SOLO or ORCHESTRA tone.

You can also reverse the MIDI connection and play the MK10 or MK20 from the synthesizer's keyboard.

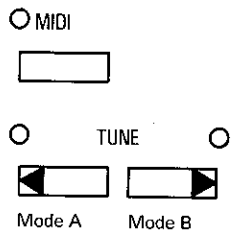
9.4 MIDI OPERATION

The MK10/MK20 provides two modes of MIDI operation:

MODE A Transmits and receives detailed information for all tones in use.

MODE B Transmits and receives program registration and keystroke data.

To select a mode, hold down the MIDI switch and press one of the TUNE switches — DOWN for A, UP for B.



9.4.1 MODE A Channels

MODE A transmits and receives keyboard data on the preset channels: (you may not alter channels used)

CHANNEL No.	PART	DATA					
		KEY ON/OFF	VELOCITY	PROGRAM CHANGE	SUSTAIN	PORTAMENTO	*PITCH BEND
1	ORCHESTRA	○	○	○	○	—	*
2	SOLO	○	○	○	○	○	○
3	BASS	○	○	○	—	—	—
4	CHORUS	○	○	○	—	—	—
5	COUNTER-MELORY	○	○	○	—	—	—
16	RHYTHM	○	○	○	—	—	—

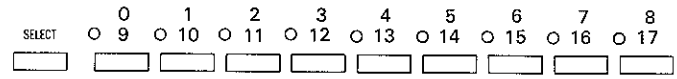
* Recognized only

KEY ON/OFF messages indicate which notes you are playing. A KEY ON is sent when you press a key and a KEY OFF is sent when you release a key. The MK keyboards send KEY ON/OFF data on channels 1 and 2 that correspond to the notes you play. They send KEY ON/OFF data on channels 3 through 5 for all the notes generated by the automatic accompaniment.

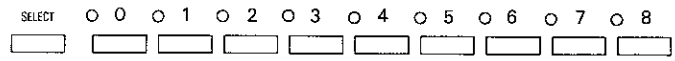
PROGRAM CHANGE messages signal tone changes. The next section lists the program numbers assigned to the various switches on the MK10/MK20 keyboard.

■ MODE A PROGRAM NUMBERS

CHANNEL NO.	PART	PROGRAM NUMBERS
1	ORCHESTRA	0-17
2	SOLO	0-17



CHANNEL NO.	PART	PROGRAM NUMBERS
3	BASS	0-8
4	CHORDS	0-8
5	COUNTER-MELODY	0-8



CHANNEL NO.	PART	PROGRAM NUMBERS
16	RHYTHM	0-127

TEMPO VARIATION	PATTERN VARIATION	VARIATION	PROGRAM NUMBERS
OFF	OFF	OFF	0-15
OFF	OFF	ON	16-31
ON	OFF	OFF	32-47
ON	OFF	ON	48-63
OFF	ON	OFF	64-79
OFF	ON	ON	80-95
ON	ON	OFF	96-111
ON	ON	ON	112-127

The program number for a rhythm selection button depends on what, if any, variations are in effect.

9.4.1.1 Connecting a Drum Machine

The MK keyboard's rhythm accompaniment section can provide an appropriate rhythm for most playing situations, but still falls short of the capabilities of a dedicated drum machine like the Kawai R-50 or R-100. Connecting a drum machine to the MK10 or MK20's MIDI OUT jack allows you to start, stop, and control it from the MK keyboard. You can even control its tempo.

9.4.1.2 Changing the tone of the MK keyboard without changing the tone of slave units

The MK keyboard also provides the capability to change its tone without changing the tone of slave unit.

■ **Procedure**

❶ Press the MIDI switch so that its LED flashes.
❷ Select a new tone for the MK10/20.
❸ Return to the standard mode of operation by pressing the MIDI switch a second time.

9.4.2 MODE B Channels

Mode B transmits program registration switch data for the UPPER (melody) and LOWER (accompaniment) portions of the keyboard to and from the MK10/MK20's internal storage area or RAM card.

You can specify the UPPER channel number with the sixteen rhythm selector switches.

When one of the three SPLIT POINT indicators is lit, the LOWER channel is automatically assigned to the next higher channel.

■ **Examples**

UPPER = 1 — LOWER = 2

UPPER = 16 — LOWER = 1 (There is no channel 17).

Keyboard	Channel	Data
UPPER	n (1 ≦ n ≦ 16)	KEY ON/OFF, PROGRAM CHANGE
LOWER	n + 1	KEY ON/OFF

9.4.2.1 Mode B Program Numbers

Program	
0	Program registration 1 (Internal)
1	Program registration 2 (Internal)
2	Program registration 3 (Internal)
3	Program registration 1 (Card)
4	Program registration 2 (Card)
5	Program registration 3 (Card)

9.5 SPECIAL MIDI MESSAGES

9.5.1 OMNI ON/OFF (MODE B only)

When OMNI mode is ON, the MK10/MK20 listens to all MIDI channels. When the keyboard is first turned on, it is always in OMNI ON mode.

9.5.1.1 To turn OMNI Mode on (Mode B only)

❶ Hold down the MIDI switch and press the RHYTHM VARIATION switch. The LED next to the RHYTHM VARIATION switch will go out to indicate that the OMNI function is off.
❷ To turn the OMNI function back on, press the switch a second time to light the LED.

9.5.2 INT/EXT CLOCK

Sequencers, drum machines and other MIDI devices each have clock generators to provide an exact MIDI clock signal. To maintain synchronization between the MK10 or MK20 and sequencers, drum machines, and other instruments attached to it through the MIDI interface, only one clock generator can be active at a time.

When several MIDI instruments are connected together, the master unit uses its internal (INT) clock and the slave units synchronize to it by using the external (EXT) clock signals provided by the master.

When the MK keyboard is first turned on, its clock is always set for internal (INT).

9.5.2.1 To switch to an external (EXT) clock (in another instrument set up as the master)

Hold down the MIDI switch and press the TRANSPOSE UP switch. The MK10 or MK20's tempo will then match that of the master's internal clock. Its rhythm section will also start and stop in synchronization with the master instrument.

9.5.2.2 To switch to an internal (INT) clock (available within the instrument)

Hold down the MIDI switch and press the TRANSPOSE DOWN switch. Any instruments using external clocks will then match the MK10 or MK20's tempo and also start and stop in synchronization with the MK10 or MK20's rhythm.

9.5.3 MIDI System Exclusive Messages

In addition to the common messages understood by all MIDI instruments no matter who the manufacturer, the MIDI standard also provides for "System Exclusive" messages, special messages that assume that both the sender and the receiver have the same capabilities. Instruments without these capabilities simply ignore these messages.

The MK10 and MK20 use system exclusive messages to send the following data to other MK10's or MK20's:

SYNC START switch ON
INTRO/ENDING switch ON
FILL IN switch 1/2/3 ON
AUTO PLAY ORCHESTRA switch ON/OFF
TO LOWER switch ON/OFF

10. JACKS AND OPTIONS

10.1 JACKS

The jacks on the front and rear panels of your MK10 or MK20 keyboard allow you to connect it to a wide range of audio and electronic equipment.

10.1.1 HEADPHONE jack

Located in the lower left corner of the front panel, this jack accepts a standard headphone plug. You can enjoy the full stereo output of your MK10 or MK20 without disturbing others.

10.1.2 L/H level switche

This two-position switch adjusts the output level to match the input impedance of the other equipment.

10.1.3 LINE OUT jacks

These allow you to connect your MK10 or MK20 to the LINE IN jacks of such equipment as tape recorders, home audio systems, or external amplifiers.

10.1.4 LINE IN jacks

These allow you to connect the LINE OUT terminals on such equipment as synthesizers and drum machines to the monitor system of your MK10 or MK20.

The plugs and cords required vary with the particular equipment.

10.1.5 SUS SW jack

This accepts the plug from a Kawai foot switch F-1 that turns the SUSTAIN function on or off.

10.1.6 VOLUME PEDAL jack

This accepts the plug from a Kawai expression pedal V-20X for controlling the unit's output volume.

10.1.7 MIDI jacks

See Section 9.2.

10.1.8 DC 9-12V jack

This accepts an AC adapter provided with your MK10 or MK20.

10.2 OPTIONS

Stereo Headphones	SH-2
MIDI cable	MDC-15, MDC-30, MDC-50, MDC-70
Foot switch	F-1
Expression pedal	V-20X
Stand	PS-65
Soft case	PSC-60
RAM card	DC-16

11. SPECIFICATIONS

SINGLE KEYBOARD SPECIFICATIONS

		MK20	MK10
KEYBOARD		61 KEYS, TOUCH RESPONSE (VELOCITY)	
ORCHESTRA		PIANO, E. PIANO, HARPSICHORD, CLAVI, VIBES, MARIMBA, BANJO, A. GUITAR, E. GUITAR, ORGAN 1, 2, STRINGS 1, 2, BRASS 1, 2, ACCORDION, VOICE, SYNTH	
		ON/OFF, SUSTAIN, DUET, TRIO, TO LOWER, UPPER/LOWER TONE, VOLUME	
SOLO		TROMBONE, TRUMPET, FLUTE, PAN FLUTE, SAX, CLARINET, OBOE, HARMONICA, WHISTLE, CELLO, VIOLIN, E. GUITAR, L. GUITAR, CHIME, SYNTH 1, 2, 3, 4	
		ON/OFF, SUSTAIN, PORTAMENTO, PITCH BENDER, VOLUME	
AUTO PLAY ACC	C. MELODY	PIANO, BELL, E. GUITAR, F. GUITAR, BRASS, TRUMPET, CLARINET, FLUTE, VIOLIN	
	CHORD	PIANO, E. PIANO, CLAVI, BANJO, A. GUITAR, E. GUITAR, BRASS, ACCORDION, SYNTH	
	BASS	BASS 1, 2, E. BASS 1, 2, 3, FUNK BASS, TUBA, SYNTH 1, 2	
		ON/OFF, C. MELODY ON/OFF, ONE FINGER, MEMORY, CONSTANT, BASS VOLUME, CHORD/C. MELODY VOLUME, TEMPO VARIATION, PATTERN VARIATION	
RHYTHM		WALTZ/JAZZ WALTZ, MARCH/POLKA, SWING 1/2, BALLAD 1/2, BOSSANOVA/RHUMBA, SALSA/SAMBA, COUNTRY 1/2, REGGAE 1/2, SHUFFLE 1/2, BOUNCE 1/2, 16 BEAT/8 BEAT, DISCO/DANCE, POPS 1/2, ROCK'N'ROLL 1/2, NEW WAVE 1/2, FUNK/RAP	
		START/STOP, SYNCRO START/PAUSE, INTRO/ENDING, FILL IN 1, 2, 3, HAND PERCUSSION	START/STOP, SYNCRO START, INTRO/ENDING, FILL IN 1,2,3, HAND PERCUSSION
		VARIATION, VOLUME, TEMPO	
PROGRAM REGISTRATION		WRITE, MEMORY 1, 2, 3	
PROGRAM ACCOMPANIMENT		RHYTHM, BASS, CHORD, C. MELODY, PROGRAM, CLEAR, MEMORY 1, 2, 3	
PROGRAM SEQUENCER		RECORD - RHY/ACCOMP, ORCHESTRA, SOLO PLAY - RHY/ACCOMP, ORCHESTRA, SOLO	
PROGRAM CARD		SAVE, LOAD, PROGRAM SEQ, PROGRAM ACCOMP/REGIST	
EFFECT		STEREO, TOUCH (for ORCHESTRA, SOLO & HAND PERCUSSION)	TOUCH (for ORCHESTRA, SOLO & HAND PERCUSSION)
OTHERS		POWER, MASTER VOLUME, TUNE, TRANSPOSE, SPLIT POINT, SPLIT POINT INDICATOR, MIDI, LINE OUT LEVEL (L/H)	
JACKS		HEADPHONE, LINE OUT (R,L), LINE IN (R,L), DC IN, VOLUME PEDAL, SUSTAIN SWITCH, MIDI (IN, OUT, THRU)	
SOUND SYSTEM		5w x 2, 12 cm SPEAKER x 2	
POWER SUPPLY		DC10V ADAPTOR, BATTERY	
WEIGHT		6.9 kg	6.8 kg
DIMENSIONS (H x D x W)		87 x 355 x 915 mm	
ACCESSORY		MUSIC RACK, PROGRAM CARD, ADAPTOR	MUSIC RACK, ADAPTOR